

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on May 7, 2003. Claims 3 and 7 are amended, and claims 30-65 are canceled without prejudice or disclaimer. As a result, claims 1-29 are now pending in this application.

Affirmation of Election

Applicant affirms the election to prosecute Group I, claims 1-29, as identified by the Examiner. The claims of the non-elected invention, claims 30-65, are hereby canceled in this amendment without prejudice or disclaimer. However, Applicant reserves the right to later file continuations or divisions having claims directed to the non-elected groups.

§112 Rejection of the Claims

Claims 3 and 7 were rejected under §112, second paragraph, for containing trademarks. Applicant has amended the specification to describe SILK as a spin-on low-k dielectric resin and NANOGLASS as a siloxane-based polymer. Claims 3 and 7 have been amended to recite a spin-on low-k dielectric resin in place of SILK, and a porous siloxane-based polymer in place of NANOGLASS. Applicant respectfully asserts that no new matter has been added by this amendment, as one of ordinary skill in the art would comprehend the meaning of the terms SILK and NANOGLASS as they pertain to semiconductor fabrication. Applicant respectfully requests withdrawal of the rejection, and reconsideration and allowance of claims 3 and 7.

§103 Rejection of the Claims

Claims 1-29 were rejected under 35 USC § 103(a) as being unpatentable over Uzoh (U.S. 6,140,234) in view of Lapatin (U.S. 6,368,954). Lapatin was filed on July 28, 2000, and the present application was filed on July 9, 2001. Thus, Lapatin is a §102(e) reference. Applicant does not admit that Lapatin is prior art, and reserves the right to swear behind the reference at a later date. Even so, Applicant respectfully asserts that the claims are patentable at least for the following reasons.

With respect to claim 1, Applicant is unable to find, among other things, in the cited portions of the references, a selective electroless deposition technique in either reference, a

suggestion to combine the references, or a showing or suggestion of a method that includes a combination of forming a tungsten nitride layer in contact with the first and second openings, and providing a copper layer in the first and second openings using a selective electroless deposition technique, as recited in the claim. Claims 2-10 depend, either directly or indirectly, on independent claim 1, and are believed to be patentable for at least the reasons provided with respect to independent claim 1.

With respect to claim 11, Applicant is unable to find, among other things, in the cited portions of the references, a selective electroless deposition technique in either reference, a suggestion to combine the references, or a showing or suggestion of a method that includes a combination of forming a tungsten-nitride layer using atomic layer deposition such that the tungsten-nitride layer is in contact with the first and second openings, and providing a copper layer in the first and second openings using a selective electroless deposition technique, as recited in the claim. Claims 12-18 depend on independent claim 11, and are believed to be patentable for at least the reasons provided with respect to independent claim 11.

With respect to claim 19, Applicant is unable to find, among other things, in the cited portions of the references, a selective electroless deposition technique in either reference, a suggestion to combine the references, or a showing or suggestion of a method that includes a combination of forming a tungsten-nitride layer, which is less than five atomic layers thick, using atomic layer deposition such that the tungsten-nitride layer is in contact with the first and second openings, and wherein the tungsten-nitride layer is deposited at a temperature of about 600-800 Kelvin, and providing a copper layer in the first and second openings using a selective electroless deposition technique, as recited in the claim. Claims 20-24 depend on independent claim 19, and are believed to be patentable for at least the reasons provided with respect to independent claim 19.

With respect to claim 25, Applicant is unable to find, among other things, in the cited portions of the references, a selective electroless deposition technique in either reference, a suggestion to combine the references, or a showing or suggestion of a method that includes a combination of forming a tungsten-nitride layer, which is less than five atomic layers thick, using atomic layer deposition such that the tungsten-nitride layer is in contact with the first and second openings, and wherein the tungsten-nitride layer is deposited at a temperature of about 600-800

Kelvin, and providing a copper layer in the first and second openings using a selective electroless deposition technique at a temperature of about 300°C to about 400°C, as recited in the claim.

Claims 26-29 depend on independent claim 25, and are believed to be patentable for at least the reasons provided with respect to independent claim 25.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((612) 373-6960) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743

Respectfully submitted,

KIE Y. AHN ET AL.

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(612) 373-6960

Date 8-6-03

By Marvin L. Beekman
Marvin L. Beekman
Reg. No. 38,377

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 6th day of August, 2003.

Name

Amy Moriarty

Signature

Amy Moriarty